

REMARKS

The application has been amended and is believed to be in condition for allowance.

The claims have been amended responsive to the new formal objections/rejections. Withdrawal of the claim objections and 112 rejections is solicited.

Claims 7, 9, 18-20, 28 and 29 are rejected as anticipated by ZAHORSKI 3,104,194.

Claims 7, 9-11, 18-20, 22-29, 31 and 31 are rejected as anticipated by GERTEL 5,061,541.

Claims 8, 21 and 30 are rejected as obvious over ZANORSKI or GETREL.

As an initial matter, applicant wishes to express appreciation for the clarity of the Official Action including the annotated drawing figures.

The claims have been amended to patentably recite the present invention.

The following discussion reviews the applied art as compared to the invention.

For instance, ZAHORSKI represents a relatively stiff structure, comprising a core element 10 of honeycomb construction which is made of sheet metal, etc. As addressed in the passage in column 1, line 70 up to column 2, line 2, the honeycomb is question imparts great compressive strength to the element 10 in questions.

However, this is precisely not the objection of the present invention or that recited. In the event of a collision, the structure according to the invention can be dented over a substantial width, whereby the ideal membrane stress is achieved and the resistance to holing is at a maximum. See the originally-filed application, page 1, lines 23-25.

See also page 3, lines 6-9, where it is clearly shown that upon a collision a deformation has occurred, but not a holing. This is in contrast to the structure according to ZAHORSKI, which apparently imparts great compressive strength and thereby cannot obtain the absorption of impacts by large deformations.

This difference in behavior upon collision or impact is caused by the fact that according to ZAHORSKI, the honeycomb is covering the full surface of the corrugated members 11 and 12. Thus, these corrugated members are firmly supported, and thereby have no freedom of deformation. Note that "stringers 17" are only wire-type bolts that retain together the elements of core 5.

In contrast, a deformation of the inventor's channels 3 can be obtained upon impact or collision as a result of the fact that said channels 3 have two side-walls 4, 5, which are free to deform, as shown in Figure 3. This is a result of the fact that according to the invention the stringers 7 run in the longitudinal direction of the channels 3, and are only connected to the top or base of the channels. This is also clearly stated

in the passage on page 3, lines 13-15. The claims have been amended in this regard.

The Official Action rejects the claims also as being anticipated by GERTEL. This objection is also not well founded. As stated in column 1, lines 4-11, this publication is related to honeycomb tables especially useful as optical tables. Such tables must be extremely rigid flat surfaces (lines 7-8), and bending or twisting of the surface of the table must be minimized (see lines 8-9).

Thus, the honeycomb table according to GERTEL comprises a top facing sheet 20, a bottom facing sheet 30, rigid corrugated sheets 40, a rigid honeycomb core 50 and internal stiffening sheets 50 in a laminated composite construction (see column 3, lines 27-31).

At first sight, a skilled man who is trying to develop a holing resistant structure for the hull of a ship would not consult publications related to stiff honeycomb tables for optical purposes. In particular, in case the skilled man is looking for a structure which may deform plastically over large areas, such consultation would be very unlikely. The stiff character of the optical table structure is also shown by the fact that the tops or bases of the corrugated sheets are rigidly connected to each other by means of the internal stiffening sheets 60.

Thus, even in the unlikely event that the honeycomb table according to GERTEL would be exposed to impact forces, no deformation over large surfaces will occur. Thus, no impact can be absorbed by such structure.

As to claim 7, neither reference discloses stringers extending perpendicularly from the bases to an inner surface of the inner skin, the stringers being parallel plates 7 running a longitudinal length of the bases of the channels, the stringers configured to provide a collapse path of the two side walls, from a force applied to the outside side of the outer skin, toward the inner skin. See specification pages 1, last paragraph; page 2, lines 13-15; and page 3, lines 6-9 and last paragraph.

Neither reference teaches stringers that are parallel plates. Both references teach away from providing a collapse path for the two side walls.

Although steel is disclosed by ZAHORSKI, applicant does not see steel 37 disclosed. Steel 37 is ductile (see the specification as to the advantageous use of ductile materials). ZAHORSKI is not seen to teach ductile steel.

Claim 11 has been amended to recite the outer skin is an outer hull of a ship and the inner skin is an inner hull of a ship, and the strips run parallel between the inner and the outer hull. This is not taught or suggested by the applied art.

Neither reference teaches or suggest (claim 18) the parallel plates have a width in a direction from the base to the

inner surface of the inner wall and a length along the longitudinal length of the bases, the length of the parallel plates being greater than the width of the parallel plates.

Rather, the references teach small honeycomb cells with small wall lengths and comparative large heights.

The references do not teach stringers extending perpendicularly only from the bases to an inner surface of the inner skin, wherein, the side walls are free of any elements extending to the inner surface of the outer wall.

See that ZAHORSKI, Figure 2, shows elements extending to the inner surface of the outer wall from the side walls. GERTEL also teaches stringers extending from other than the bases to the inner surface of the inner skin (the walls of layer 50).

The structure of claim 22 is not taught or suggested by the applied references, in that the references do not teach adjacent stringers jointed, at stringer edges, by strips spaced apart along the length of each base, and the stringers consist essentially of parallel plates having a width in a direction from the base to the inner surface of the inner wall and a length along the longitudinal length of the bases, the length of the parallel plates being greater than the width of the parallel plates.

The references do not teach (claim 23) the strips being spaced apart along the length of the bases.

As to claim 25, the references do not teach that the stringer parallel plates have a width in a direction from the base to the inner surface of the inner wall and a length along the longitudinal length of the bases, the length of the parallel plates being greater than the width of the parallel plates.

As to claim 28, the references do not teach stringers parallel to each other and extending perpendicularly from the bases to an inner surface of the inner skin, the stringers being contact free of any side walls, each stringer having an adjacent-most stringer that extends from an adjacent-most base.

See that adjacent stringers of the invention are found at adjacent bases of the channels. This is not true of the applied references.

As to claim 32, the references do not teach that the parallel plates have a width in a direction from the base to the inner surface of the inner wall and a length along the longitudinal length of the bases, the length of the parallel plates being greater than the width of the parallel plates.

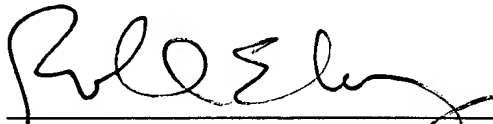
Thus, for the above reasons, the independent claims and the dependent claims are believed patentable. Reconsideration and allowance of all the claims are respectfully requested.

In view of the above, applicant believes that the present application is in condition for allowance and an early indication of the same is respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



---

Roland E. Long, Jr., Reg. No. 41,949  
745 South 23<sup>rd</sup> Street  
Arlington, VA 22202  
Telephone (703) 521-2297  
Telefax (703) 685-0573  
(703) 979-4709

REL/lk